41. (Amended) The method according to claim 39, further comprising culturing the cells in the presence of an effective amount of IL-3 wherein said effective amount is in the range of about 10 ng/mL to about 100 ng/mL.

C5

42. (Amended) The method according to claim 37, wherein said effective amount of IL-6 is in the range of about 10 ng/mL to about 100 ng/mL.

C6

51. (Amended) The method according to claim 18, wherein said human hematopoietic cells are $CD34^{+}Thy\text{-}1^{+}Lin^{-}$ cells.

REMARKS

Claims 24, 25, 31, and 37 have been amended to provide for consistency in the abbreviation for interleukin 3 (IL3) and interleukin 6 (IL6), and claim 20 has been amended to correct for an obvious typographical error. Claims 24, 26, 27, 39, 40, and 41 have been amended to include the modifier "about" with respect to the particular concentration ranges recited in these claims. Support for this amendment resides in the specification and other pending claims. Claim 37 has been amended to provide the complete name for TPO, FL, and IL6 in conjunction with their first use in this claim. Claim 37 has been amended to recite human $CD34^{+}$ hematopoietic cells, thereby providing antecedent basis for the human cells recited in claim 44. Claim 51 has been amended to identify the human hematopoietic cells as $CD34^{+}Thy\text{-}1^{+}Lin^{-}$ cells; support for this amendment resides in the specification and in the pending claims, for example, claims 35 and 44. Claim 51 has also been amended to depend from claim 18, as dependency from claim 37 results in a claim duplicative of claim 44. No new matter has been added by way of claim amendment. The Examiner is respectfully requested to enter these amendments to the claims.

The advisory action indicates that claims 18-20, 23-27, 31-35, 37-44, and 46-47 are pending in the application. However, review of the prosecution history in the present case indicates that claims 48-51, which were added in the Amendment of January 21, 2000, were never canceled by Applicants, although reference to them by the Office ceased as of the Office Action of January 4, 2001 (Paper 12). Therefore, claims 18-20, 23-27, 31-35, 37-44, and 46-47 *and* 48-51 are now pending in the application.

The pending claims stand rejected under 35 U.S.C. §103(a). Applicants maintain that the Examiner has not demonstrated the requisite showing of a motivation to combine the references in the manner suggested by the Examiner. It is believed that the claims as amended are free of the cited art.

Detailed remarks in support of Applicant's position will follow in a Supplemental Amendment to be filed prior to the Examiner's reconsideration of this application on its merits.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

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I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Commissioner For Patents, Washington, DC 20231.

Lynda-Jo Pixley

Version with Markings to Show Changes Made:

Please amend claims 20, 24-27, 31, 37, 39-42, and 51 to read as follows:

20. (Twice amended) The method according t claim 19, further comprising culturing the hematopoietic stem cells in the presence of [a] interleukin 3 [(IL3)](IL-3) in a concentration range of about 5 ng/mL to about 200 ng/mL.

24. (Twice amended) The method of claim 23, further comprising culturing the stem cells in the presence of an effective amount of leukemia inhibitory factor (LIF) wherein said effective amount is in the range of about 5 ng/mL to about 200 ng/mL.

25. (Twice amended) The method of claim 23, further comprising culturing the stem cells in the presence of an effective amount of interleukin 3 [(IL3)](IL-3) wherein the effective amount is in the range of about 10 ng/mL to about 100 ng/mL.

26. (Twice amended) The method of claim 23, further comprising culturing the stem cells in the presence of a c-kit ligand [wherein said effective amount is]in [the]a concentration range of about 5 ng/mL to about 200 ng/mL.

27. (Twice amended) The method of claim 25, further comprising culturing the stem cells in the presence of a c-kit ligand [wherein said effective amount is]in [the]a concentration range of about 5 ng/mL to about 200 ng/mL.

31. (Amended) The method according to claim 23, wherein the effective amount of TPO and FL individually is in the range of about 5 ng/mL to about 200 ng/mL and the effective amount of [IL6]IL-6 is in the range of about 10 ng/mL to about 100 ng/mL.

37. (Twice amended) A method of transducing [mammalian]human $CD34^+$ hematopoietic cells including a subpopulation of hematopoietic stem cells comprising:

a) obtaining a source of hematopoietic cells including the subpopulation of hematopoietic stem cells;

b) culturing said cells with fibronectin and the cytokines [TPO, FL and IL-6] thrombopoietin (TPO), flt3 ligand (FL), and interleukin 6 (IL-6), individually provided in the range of about 0.1 ng/mL to about 500 ng/mL;

c) infecting the cultured cells with a retroviral vector including a polynucleotide sequence encoding a heterologous gene; and

d) obtaining transduced cells wherein said gene is expressed.

39. (Amended) The method according to claim 37, further comprising culturing the cells in the presence of an effective amount of leukemia inhibitory factor (LIF) wherein said effective amount is in the range of about 5 ng/mL to about 200 ng/mL.

40. (Amended) The method according to claim 37, further comprising culturing the cells in the presence of an effective amount of IL-3 wherein said effective amount is in the range of about 10 ng/mL to about 100 ng/mL.

41. (Amended) The method according to claim 39, further comprising culturing the cells in the presence of an effective amount of IL-3 wherein said effective amount is in the range of about 10 ng/mL to about 100 ng/mL.

42. (Amended) The method according to claim 37, wherein said effective amount of IL-6 is in the range of about 10 ng/mL to about 100 ng/mL.

51. (Amended) The method according to claim [37]18, wherein said human hematopoietic cells are [$CD34^+Thy\text{-}1^-$]$CD34^+Thy\text{-}1^+Lin^-$ cells.